Industrial Pretreatment Quarterly

Published for Industrial Dischargers by the King County Industrial Waste Program




Volume XX Issue 2 June 2002

Industrial Waste Program 2001 EnvirOvation Award Winner

The King County Industrial Waste Program is proud to announce the selection of the Boeing Commercial Airplane Group – Renton as the EnvirOvation Award winner for the year 2001. This award is given to companies that have: voluntarily implemented an innovative pollution prevention strategy; significantly updated their pretreatment equipment or methods; significantly reduced the amount of wastes being discharged to King County sewers or significantly reduced their water use.

In 2001, the Boeing – Renton Facility completed a two-year, $1,400,000 upgrade of its wastewater treatment plant. This project included equipment and instrument upgrades, the design of a new Programmable Logic Controller (PLC) automated control system and electronic record keeping. These modifications, in addition to prescreening of the wastewater, have resulted in improved control of the facility. Treatment plant personnel (Chad Kiehn, Terry Hoskinson, Dave Farnam and Brad Hedger) find that the upgrade has resulted in an approximately 25 percent reduction of the amount of chemicals used to treat the water.

Industrial Waste Program Manager Elsie Hulsizer (right) presents Carolyn Corvi, Vice President/ General Manager of the Boeing Commercial Airplanes Group 737 Programs, with the Boeing Commercial Airplane Group – Renton's 2001 EnvirOvation Award.

The Boeing – Renton Facility also supplemented the safety of its plant with the installation of a new trench collection system to protect against accidental spills. The company installed double-contained piping for both the acid and sludge feed piping systems.

(Con't. on Page 2)

Left to right: Boeing Renton Facility staff Kevin Humpston; Facilities Engineer, Brad Hedger; Plant Operator and Environmental EngineerDor is Turner, with the IW Program's Elsie Hulsizer.

June 2002 Issue Contents:

Printed on recycled paper

Issues of this newsletter are posted and archived at http://dnr.metrokc.gov/wlr/indwaste/publicat.htm.

130 Nickerson Street, Suite 200, Seattle, WA 98109-1658
206-263-3000 http://dnr.metrokc.gov/wlr/indwaste/

King County
Department of Natural Resources and Parks
Indusrtrial Waste Program

Touring a portion of the Boeing Renton Facility's award-winning waste water treatment plant.

The facility also took steps that reduced the discharge of groundwater to the sewer system by over 50 percent. The plant's innovative new trench sealing system greatly reduced the amount of groundwater that infiltrated the trenches and discharged to the King County sewage system.

Congratulations to Boeing Commercial Airplane Group – Renton!

Industrial Waste Advisory Committee Meets

The Industrial Waste Advisory Committee (IWAC) is composed of volunteers from King County regulated industries and related organizations. IW Water Quality Staff Engineer Bruce Tiffany organizes and facilitates committee meetings.

At the March 6 meeting, Lisa Vogel, Water Quality Planner, Wastewater Treatment Division, King County gave a follow-up presentation on her work developing an Environmental Management System (EMS) for King County Biosolids. The Biosolids EMS will provide a standardized and comprehensive framework to ensure that biosolids activities are managed effectively.

The benefits of an EMS are to: ensure compliance; address environmental issues; foster best management practices; facilitate continual improvement; help identify cost savings and promote better public information.

Peggy Rice, IW Investigator, explained that the IW Program would be issuing discharge authorizations to hospitals in the King County sewer service area. More information on this topic is available on the IW Web pages (of the King County Web site) at hospitals.htm" http://dnr.metrokc.gov/wlr/indwaste/ hospitals.htm.

Elsie Hulsizer, IW Program Manager, gave a presentation about the King County Wastewater Treatment Division's Productivity Initiative and the division and program Balanced Scorecards. (These are tools used in the Wastewater Productivity Initiative to measure performance.)

The next IWAC meeting was scheduled for June 5, 2002 at 9:00 a.m. at Honeywell Inc, Redmond, WA. For more information please telephone the Industrial Waste Program at (206) 263-3000 or e-mail Kristin Painter at Kristin.painter @metrokc.gov.

Committee meetings are usually held from 9 a.m. to noon in Room 105 at 130 Nickerson Street (Canal Place office park), Seattle. For information, telephone the Industrial Waste Program at (206) 263-3000.

The meeting site is wheelchair accessible. Those who have needs or disabilities for which arrangements must be made ahead of time should get in touch with the Industrial Waste Program at least two weeks before a meeting. Telephone (206) 263-3000 (voice) or the Washington Relay Service at 1-800-833-6388 or e-mail Kristin Painter at kristin.painter @metrokc.gov.

News Shorts....

Hospital Discharge Authorizations Update

In mid-March, the Industrial Waste Program (IW) issued DRAFT discharge authorizations to 14 King County hospitals. The written authorizations contained Best Management Practices (BMP's) and outlined requirements to meet King County local limits.

Hospitals were given 30 days (until April 17) to comment on the proposed discharge authorization. On April 3, IW held a public informational meeting at which interested parties could discuss, learn and comment on the authorization.

IW is in the process of incorporating some of the comments and finalizing the discharge authorization. Hospitals were billed in early May. Once the discharge authorization is finalized, and IW has received payment, the program will issue each final discharge authorization. The discharge authorization will be valid for 5 years.

Readers with any questions, or desiring more information on the Discharge Authorization, can check out the IW Web site at http://dnr.metrokc.gov/wlr/indwaste or contact Peggy Rice at (206) 263-3028.

EPA' s Proposed MP & M Rule

The May 21, 2002 *Federal Register* included an announcement by the U.S. Environmental Protection Agency (EPA) that it intends to finalize effluent limitations guidelines for the Metal Products and Machinery (MP & M) Point Source Category in December 2002. This announcement included a notice of a June 7, 2002 public meeting at which they planned to announce the status on this rule making. Industrial Waste Program (IW) staff anticipate that the EPA will be making significant changes to the MP&M regulations that were proposed in the January 3, 2001 *Federal Register*.

Since the proposed regulation may affect a significant number of dischargers in King County, IW will provide any relevant information coming from the June meeting in the September, 2002 edition of this newsletter.

For more information go to http://www.epa.gov/waterscience/guide/mpm/rule.html.

Washington State Department of Ecology's Cleaner Production Challenge

On April 15, 2002 the Washington State Department of Ecology issued a press release regarding a new program called "The Cleaner Production Challenge". Fifty-nine manufacturers in Washington are participating in this program that provides free technical assistance aimed at reducing the amount of hazardous waste and wastewater produced in the manufacturing process.

The program provides technical assistance and training to wet-process manufacturers, which use large quantities of water and generate a great deal of dangerous sludge and wastewater. The group comprises metal finishers, aerospace-parts manufacturers and circuit-board manufacturers. Ecology states that in 2000 alone, the three types of facilities produced 80 million pounds of hazardous waste, some of which could have been prevented.

Last year, Ecology asked the facilities what would help them the most. They responded with requests for training, workshops and information from successful facilities. The department is now providing that assistance through the Cleaner Production Challenge, in exchange for stronger efforts to prevent pollution and conserve resources. Ecology also invited the participants to learn about cost-saving improvements at a training seminar in May.

To ensure success, Ecology has enlisted the help of industry leaders, such as Asko Processing and Art Brass Plating, both of Seattle, to help spread the word about the benefits of process changes and sophisticated pollution-preventive measures. The facilities have agreed to serve as examples, answering questions about environmental upgrades and offering facility tours.

Several associations and facilities have endorsed the Cleaner Production Challenge, including: The Boeing Company; the Association of Electroplaters & Surface

Finishers; the U.S. Environmental Protection Agency and Pacific Northwest Pollution Control Association.

The Cleaner Production Challenge targets wet-process facilities, but any Washington company interested in pollution prevention or technical assistance can contact the nearest Ecology office for information and assistance.

If you would like information on this program please contact Caitlin Cormier, Public Information Manager, phone 360-407-6149, or pager 360-971-5536. Or for more information go to the following Web addresses:

http://www.ecy.wa.gov/biblio/0204005.html,

or

http://www.ecy.wa.gov/programs/hwtr/P2/p2home.html

or

http://www.ecy.wa.gov/programs/hwtr/index.html.

The Department of Ecology's Web site is: http://www.ecy.wa.gov

EPA proposes rule for Meat and Poultry Category

On February 25, 2002 the U.S. Environmental Protection Agency (EPA) proposed a rule for the Meat and Poultry Products Point Source Category (MPP) in the *Federal Register*. The Section B. preamble stated: "EPA is not proposing new pretreatment standards for existing or new MPP indirect dischargers. While EPA has some information regarding effluents from MPP indirect dischargers that may pass through, interfere with or otherwise be incompatible with POTW (publicly owned treatment works) operations, it is not clear that it justifies categorical pretreatment standards for this industry."

In the next section the EPA solicited comments on the use of the 100 mg/L standard for preventing POTW interference by vegetable/animal oil and grease discharges. King County filed written comments including a statement stating, "We believe there is no compelling reason for such a standard."

If the EPA were to promulgate a 100 mg/L standard for polar (animal/vegetable) FOG it would reverse a policy which King County, then Metro, established in 1993-to regulate polar FOG via a narrative standard instead of the numerical limit. Such a reversal would affect a number of industrial/commercial dischargers in the county.

King County arrived at its 1993 policy change after it undertook a comprehensive study of how it regulated polar FOG. The study was conducted for the following reasons:

- some companies frequently violated the numerical limit of 100 mg/L during FDA-required cleaning operations;
- there appeared to be no clear basis for the numerical standard, and uncertainty existed as to the impact of polar FOG on our treatment plants;
- sampling and analytical methods used in quantifying FOG discharges may bias the results. As a result the county's Waste Water Treatment Division (WTD) faced considerable difficulty in enforcing the numerical standard.

Several studies and WTD's operational data indicated that polar FOG is effectively removed during secondary treatment. WTD operators generally believe that free floating (non-emulsified) FOG is removed by primary treatment, while typical quantities of emulsified FOG pass primary treatment and are removed in secondary treatment. The percentage of

polar FOG biologically digested, and the percentage removed as solids are yet not completely known. Laboratory tests suggest that polar FOG is biodegradable and contributes to the Biochemical Oxygen Demand (BOD) of wastewater.

Grease accumulations in the WTD's collection system and treatment facilities require maintenance to prevent clogging of pipes and pumps. Testing of these materials indicated polar FOG contributed to these accumulations. Clogging of collection lines appears to be associated with chronically high concentrations or slug discharges. Several research articles suggest that emulsified polar FOG contributes very little to sewer line accumulations and the majority of sewer line obstructions are caused by non-emulsified or free floating FOG.

The WTD's conclusion was that it should replace the numerical limit with a visual assessment of free floating FOG, accomplishing the following:

- avoiding the ambiguity of the existing sampling and analytical procedures;
- giving the WTD the ability to concentrate enforcement on free floating FOG. (Free floating FOG is believed to cause WTD the most immediate problems);
- providing companies with free floating FOG the opportunity to use simpler, less expensive treatment than the physical or chemical treatment needed to treat emulsified FOG. Simple gravity separation of FOG is generally consistent with the treatment methods used at several industries and would not penalize the industries currently treating their wastewater.

Based on the forgoing information WTD promulgated a narrative limit in August 1993, which requires dischargers to minimize the discharge of free floating polar FOG, and to complete a FOG control plan subject to King County's review. The narrative limit also clearly states that: "Dischargers may not add emulsifying agents exclusively for the purposes of emulsifying free floating FOG".

The above-mentioned requirements of the free floating polar FOG narrative limit help ensure that polar FOG discharges are achievable with conventional treatment technologies while simultaneously not creating a significant burden upon the King County Sanitary Sewer System.

With the nine years of experience with the narrative limit, and with a previous 24 years of experience with the numerical standard, the agency's conclusion is that the regulation of polar FOG is best left with local sewerage agencies, and that a numerical limit is not the best way to regulate polar FOG. WTD will continue to enforce its numerical limit for non-polar (petroleum-based) FOG.

The EPA requested that comments be submitted by April 26, 2002. IW will keep its newsletter readers informed about the outcome of this EPA proposal.

County Environmental Laboratory to Use New Method for FOG Analysis

The following article was contributed by Colin Elliot, QA/QC Officer, Kate Leone, Manager and Dana Walker, Trace Organics Supervisor of the King County Environmental Laboratory.

The King County Environmental Laboratory plans to adopt a new method for nonpolar oil and grease compliance samples.

Based on its studies, the Environmental Laboratory has decided to pursue the use of solid phase extraction disks to switch from the freon method to the newer Environmental Protection Act "1664" method. Results using solid phase extraction overall seemed to be quite comparable to the results generated using the freon extraction.

Currently it is acceptable for laboratories to submit data using either method EPA 413.1 or EPA 1664 for Nonpolar Oil and Grease for

compliance sample efforts. While the laboratory continues to use EPA Method 413.1, it has evaluated the newer method EPA 1664 by running a number of side-by-side analyses to determine if problems might be anticipated during the shift to the new method. Staff tested the new method by analyzing 20 different industrial effluents and seven replicates for municipal treatment plant influent and effluent.

The new method allows for two approaches to sample preparation:

The first is similar to the previous EPA Method 413.1 and employs liquid-liquid extraction, but the solvent is hexane rather than freon.

The second approach uses a solid phase extraction disk and hexane. This approach uses much less solvent, is faster, and avoids some of the technical problems the liquid-liquid extraction generates (such as emulsion formation).

For the study, laboratory staff extracted each of the samples using EPA Method 413.1, EPA Method 1664 using the hexane liquid-liquid approach, and EPA Method 1664 using disks from two solid phase extraction companies. For the industrial effluents they treated the extracts with silica gel to generate nonpolar oil and grease results. This approach is referred to as SGT-HEM (Silica Gel Treated-Hexane Extractable Materials) by EPA Method 1664. For the municipal treatment plant samples they ran total oil and grease. This approach is referred to as HEM (Hexane Extractable Materials) by EPA Method 1664.

To evaluate the results of the study they assumed the 'true' value for each sample to be the result from EPA Method 413.1. Based on this they calculated a recovery for each of the samples. What the lab staff found was that on average for the industrial samples, the recoveries were at around 66% for the liquid-liquid extraction approach, 93% for one of the solid phase extraction disks, and 86% for the second solid phase extraction disk. For the municipal treatment samples the liquid-liquid extraction approach gave 79% recovery, for the first solid phase disk 128% recovery, and for the second disk a 98% recovery.

The laboratory concluded that the solid phase extraction approach generates data that are, in general, more comparable to a freon extraction (EPA Method 413.1). (It notes that, in the studies there were a couple of industries that gave results under the new method that were significantly different than the freon method. In one case the freon results were around 34 mg/L whereas the solid phase results were 88 mg/L. Neither of these results were out of compliance, but depending on the specific waste there may be a bias in final results.)

Industries using the new EPA Method 1664 should make two additional considerations that apply to the results generated:

If results are out of compliance, and those using the method feel that this result is due to the method change, there is a process (albeit costly) to contest the situation: Three replicates of each sample by each method on any seven days over a minimum 30-day period, for a total of 42 analyses, can be performed (21 by the older method EPA 413.1 and 21 by the newer EPA 1664). The Method 1664 analyses must employ the liquid-liquid hexane version of the method. Results from this would then be used to show a method bias in that specific waste stream. Industries wishing to use this option would contract with their own laboratories to have this work performed. Results from the side-by-side analysis would be sent to Industrial Waste which would use the data to determine if a conversion factor would be required and what factor would be appropriate.

EPA Method 1664 has specific quality control (QC) requirements that must be met for data to be of compliance quality. Specifically, recoveries for spike blanks and matrix spikes must meet recovery criteria for the associated data to be used for compliance. Any results reported with failing QC or no reported QC would be considered invalid. Note that because the compliance

requirement is for nonpolar oil and grease, only the nonpolar QC need be analyzed and reported.

The laboratory will be finalizing method validation and will then complete Washington Department of Ecology (WDOE) accreditation for Nonpolar Oil and Grease by EPA Method 1664 by the end of 2002. This process will involve evaluation of the method sensitivity, accuracy and precision. Staff will also need to successfully complete a blind Performance Evaluation sample in order to obtain WDOE accreditation. The lab expects to be ready to test field samples for compliance verification by early 2003.

Publication of recent enforcement actions

This publication displays those companies that were the subject of enforcement actions during the period of March 2002 through May 2002 (or have not been previously published) and their violations met one or more of the following criteria:

- Were found in significant noncompliance during the reporting period;
- Received fines; or
- Had violations that were unique or warrant special attention.

This information is available on advanced request in accessible formats for persons with disabilities. Please call 206-263-3000 or TTY relay service at 1-800-833-6388.

Companies Found with Significant Noncompliance

Company	Nature of Violation/ Type of Pollutant	Basis for Significant Noncompliance	Penalty	Comments
Aero Controls, Inc. 1610 20th Street NW Auburn, WA 98036	Cadmium	Aero Controls violated the technical review criteria, that is greater than 33 % of the measured concentrations of cadmium were in excess of the standard by a factor of 1.2 times the limit.	Compliance schedule and post-violation charge.	Aero Controls is taking steps to reduce the amount of cadmium in their wastewater.
Mikron Industries 1034 Sixth Avenue N. Kent, WA 98032	Non-polar fats, oils and grease	Mikron Industries violated the technical review criteria, of the measured concentrations of non-polar fats, oils and grease were in excess of the standard by a factor of 1.4 times the limit.	Compliance schedule and post-violation and charge.	Mikron Industries reconfigured their sample sites, instituted best management practices, and are back into compliance with the discharge limits.

n addition to the above actions King County Industrial Waste also issued enforcement actions for the following violations: Antimony (1); Bis (2-ethylhexyl) Phthalate (1); cadmium (2); copper (1); molybdenum (1); pH-Acidic (1); total toxic organics (1).

King County

Industrial Waste Program
Wastewater Treatment Division
130 Nickerson Street, Suite 200
Seattle, WA 98109-1658

PRSRT STD
U.S. POSTAGE
PAID
SEATTLE, WA
PERMIT NO. 01605

RETURN SERVICE REQUESTED